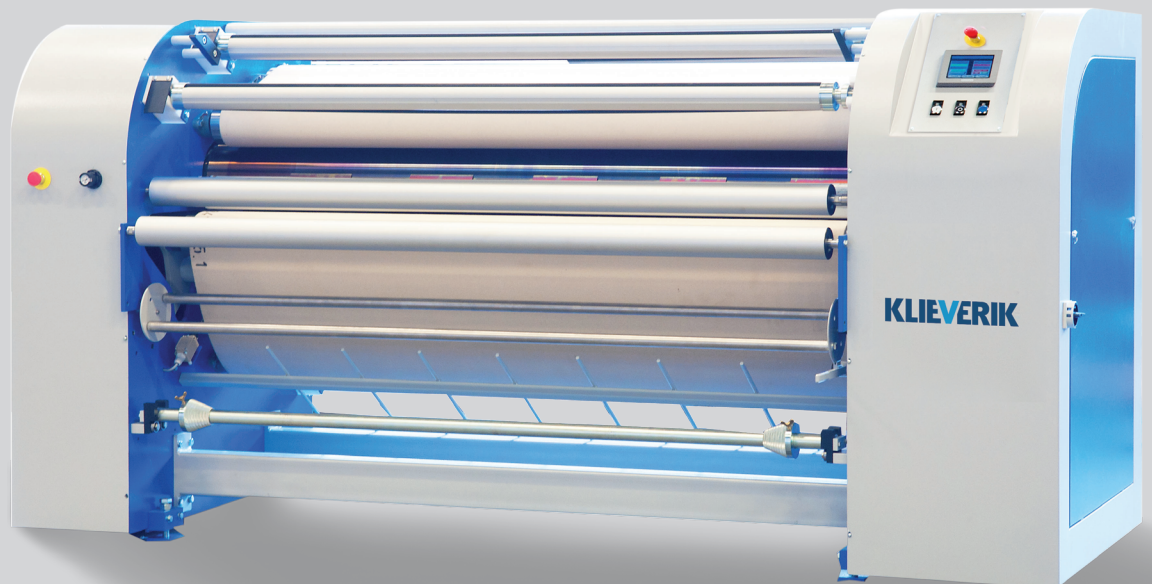


## DIGITAL PRINTING

DYE SUBLIMATION TRANSFER PRINTING, FIXATION OF  
DIRECT PRINTED DISPERSED DYES OR PIGMENT INKS



- ▶ Brilliant colours
- ▶ High print definition
- ▶ Reproducibility



## WITH A KLIEVERIK YOU ALWAYS MAKE THE RIGHT CHOICE

There are many, many details that go into a Klieverik calender all with a specific purpose in mind. These details culminate into a world class calender which precisely controls the critical variables of **temperature**, **pressure** and **web handling** during the dye sublimation transfer or fixation process.

Our calenders use thermal oil for regulating and accurately maintaining the drum's surface temperature. We use a unique expansion vessel for the oil (which expands up to 20%) which insures that the drum is always 100% full of oil. This design, in junction with how we circulate the oil internally within the drum, means no colour output differences over the width or in time.

# DYE SUBLIMATION TRANSFER PRINTING AND FIXATION

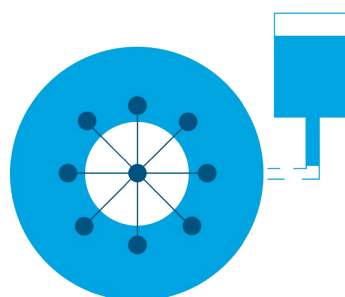
You will get high-value end-products with brilliant colours and sharp edge definition. A Klieverik machine offers reproducibility and high processing speeds. We offer first time right production, which means less waste and fewer re-prints. Klieverik calenders are made with high-quality components; it is a reliable machine. The down-time of the machine is limited, which means your production is guaranteed.

By using simple laws of thermodynamics, our heating elements are in direct contact with the thermal oil leading to shorter heating up times and higher energy efficiency.

Klieverik uses the longest belt in the industry and a specialized PID™ steering system which minimizes lateral movement of the belt preventing transfer defects. This feature also insures better longevity of the belt.

Our machines can also be customized with different options which are available to ideally match the manufacturing preferences of our customers.

## Directly heated drum

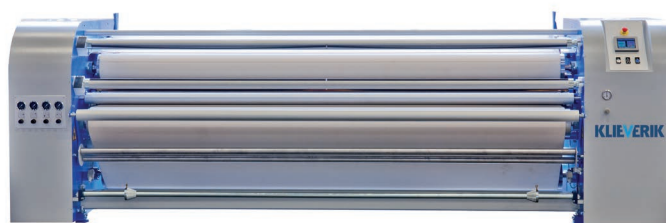


Klieverik heated drum: a unique concept. Completely filled with oil because of expansion vessel. Directly heated because heating elements are directly in the oil. Best temperature consistency due to thorough mixing of the oil.

## SPECIFICATIONS

| TYPE        | DRUM<br>SIZE MM | DRUM<br>SIZE INCH | DRUM<br>WIDTH MM | DRUM<br>WIDTH INCH | WORKING<br>WIDTH MM | WORKING<br>WIDTH INCH | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>M <sup>2</sup> /HR | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>FT <sup>2</sup> /HR | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>M/MIN | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>FT/MIN |
|-------------|-----------------|-------------------|------------------|--------------------|---------------------|-----------------------|---------------------------------------------------------|----------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| GTC81-1850  | 195             | 7.7               | 1850             | 72.8               | 1650                | 64.9                  | 69                                                      | 746                                                      | 0.70                                        | 2.3                                          |
| GTC81-2750  | 195             | 7.7               | 2750             | 108.3              | 2550                | 100.4                 | 107                                                     | 1152                                                     | 0.70                                        | 2.3                                          |
| GTC81-3500  | 195             | 7.7               | 3500             | 137.8              | 3200                | 125.9                 | 134                                                     | 1446                                                     | 0.70                                        | 2.3                                          |
| GTC101-1850 | 365             | 14.4              | 1850             | 72.8               | 1650                | 64.9                  | 170                                                     | 1830                                                     | 1.70                                        | 5.6                                          |
| GTC101-2750 | 365             | 14.4              | 2750             | 108.3              | 2550                | 100.4                 | 260                                                     | 2800                                                     | 1.70                                        | 5.6                                          |
| GTC101-3500 | 365             | 14.4              | 3500             | 137.8              | 3200                | 125.9                 | 326                                                     | 3509                                                     | 1.70                                        | 5.6                                          |
| GTC111-2000 | 500             | 19.7              | 2000             | 78.7               | 1800                | 70.8                  | 270                                                     | 2906                                                     | 2.50                                        | 8.2                                          |
| GTC111-2750 | 500             | 19.7              | 2750             | 108.3              | 2550                | 100.4                 | 345                                                     | 3714                                                     | 2.50                                        | 8.2                                          |
| GTC111-3500 | 500             | 19.7              | 3500             | 137.8              | 3200                | 125.9                 | 495                                                     | 5328                                                     | 2.50                                        | 8.2                                          |
| GTC131-2000 | 760             | 30.0              | 2000             | 78.7               | 1800                | 70.8                  | 443                                                     | 4765                                                     | 4.10                                        | 13.5                                         |
| GTC131-2750 | 760             | 30.0              | 2750             | 108.3              | 2550                | 100.4                 | 627                                                     | 6750                                                     | 4.10                                        | 13.5                                         |
| GTC131-3500 | 760             | 30.0              | 3500             | 137.8              | 3200                | 125.9                 | 787                                                     | 8470                                                     | 4.10                                        | 13.5                                         |
| GTC141-2000 | 1070            | 42.1              | 2000             | 78.7               | 1800                | 70.8                  | 605                                                     | 6508                                                     | 5.60                                        | 18.4                                         |
| GTC141-2750 | 1070            | 42.1              | 2750             | 108.3              | 2550                | 100.4                 | 857                                                     | 9219                                                     | 5.60                                        | 18.4                                         |
| GTC141-3500 | 1070            | 42.1              | 3500             | 137.8              | 3200                | 125.9                 | 1075                                                    | 11569                                                    | 5.60                                        | 18.4                                         |

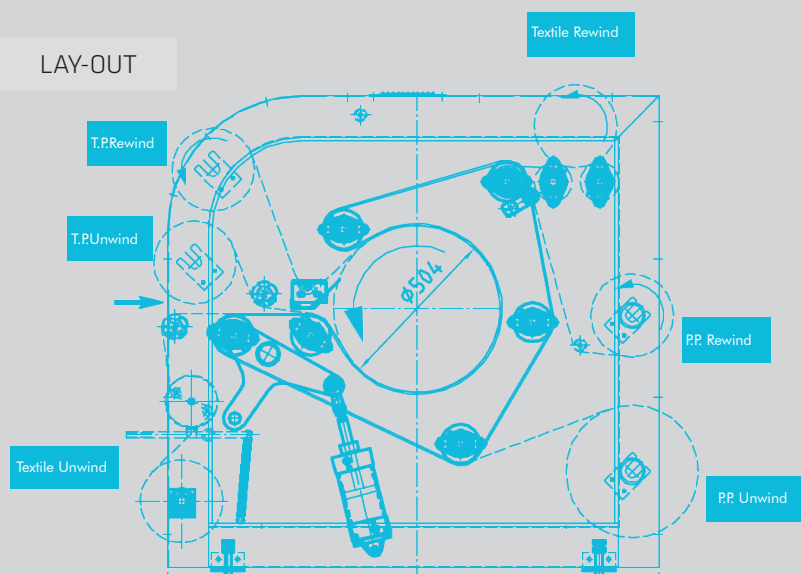
## TRANSFER & FIXATION BELT CALENDERS MODEL GTC



Klieverik GTC belt calenders can be used for dye-sublimation transfer printing (paper to textile) as well as for dye fixation of direct printed dispersed dyes or pigments. Our GTC belt calenders are well suited for entry level professionals to high-end production facilities.

With sharp edge definition, high processing speeds, less waste and fewer re-prints, these calenders are designed for maximizing profitability. These machines are suitable for all kinds of materials like wovens-stretch-knits-non wovens.

## LAY-OUT



## OPTIONS

## FEATURES AND OPTIONS

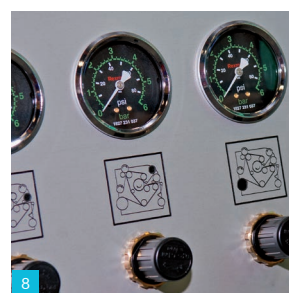
### MODEL GTC

The calenders are standard equipped with:

- 1 Low tension textile unwind
- 2 Textile tensioning device
- 3 Universal unwind shaft for textiles rolls for any core diameter
- 4 Wind and unwinding shafts for transfer and protection paper, each with tensioning device
- 5 Contact winder for textile
- 6 Scraper blades to prevent paper or textile from wrapping around the drum and cleaning of the drum
- 7 Cooling down and start-up timer
- 8 Air pressure operated paper tension setting
- 9 Touchscreen
- 10 Low Tension textile winding for stretch sensitive materials

Options:

- 11 Driven substrate expander
- 12 Edge cutting unit
- 13 Compressor
- 14 Exhaust hood
- 15 Pressure laminating roller
- 16 Pneumatic winding shafts



## SPECIFICATIONS

| TYPE             | DRUM<br>SIZE MM | DRUM<br>SIZE INCH | DRUM<br>WIDTH MM | DRUM<br>WIDTH INCH | WORKING<br>WIDTH MM | WORKING<br>WIDTH INCH | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>M <sup>2</sup> /HR | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>FT <sup>2</sup> /HR | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>M/MIN | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>FT/MIN |
|------------------|-----------------|-------------------|------------------|--------------------|---------------------|-----------------------|---------------------------------------------------------|----------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| GTC81-1850 SPFL  | 195             | 7.71850           | 72.8             | 1650               | 64.9                |                       | 649.4                                                   |                                                          | 0.60                                        |                                              |
| GTC101-1850 SPFL | 365             | 14.41850          | 72.8             | 1650               | 64.9                | 115                   | 1226                                                    |                                                          | 3.85                                        |                                              |
| GTC111-2000 SPFL | 500             | 19.72000          | 78.7             | 1800               | 70.8                | 175                   | 1884                                                    | 1.6                                                      | 5.3                                         |                                              |
| GTC131-2000 SPFL | 760             | 30.0              | 2000             | 78.7               | 1800                | 70.8                  | 262                                                     | 2824                                                     | 2.43                                        | 8.0                                          |
| GTC141-2000 SPFL | 1070            | 42.12000          | 78.7             | 1800               | 70.8                | 369                   | 3974                                                    |                                                          | 13.22                                       |                                              |

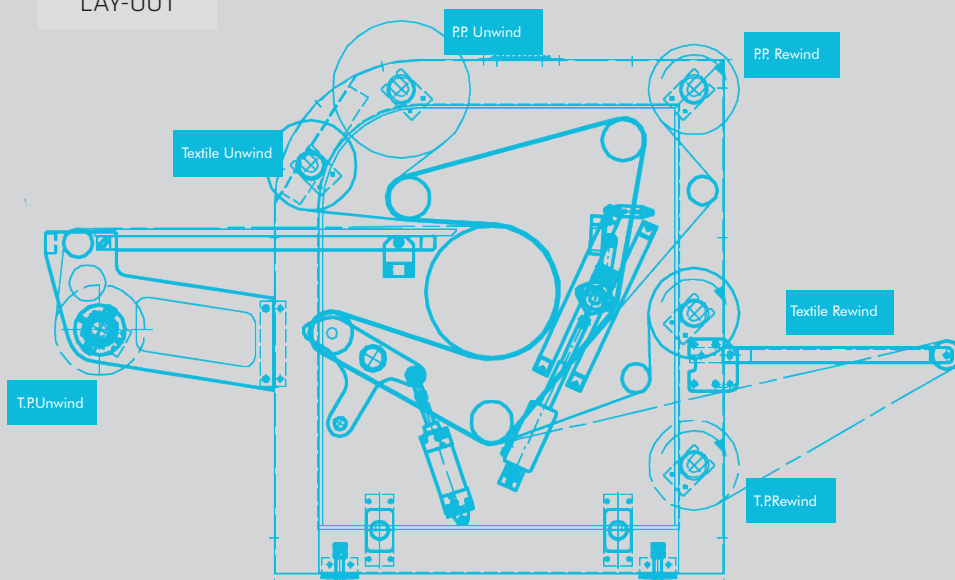
## TRANSFER PRINTING CALENDERS SINGLE PIECES MODEL GTC- SP FLOWLINE

The GTC-SP Flowline model has been designed for the efficient production of single pieces transfer printing, but is also capable of cut sheet repeat jobs or roll-to-roll transfer printing. All kind of materials like woven – stretch – knits - non woven can be printed with applications ranging from athletic apparel to doormats. This calender is named 'Flowline' because of the way the material is transported through the machine. The blank pieces of fabric are first laid down on the infeed table and are then

automatically transported (or 'flow') to the back of the calender in the exact same order. The transferred pieces of fabric can easily be gathered and sorted by size and colour or design. It is also possible to have the transferred pieces flow to the front of the machine by simply changing the directional plate under the infeed table. This feature is great for sampling or short runs.



## LAY-OUT



## OPTIONS

## FEATURES AND OPTIONS

### MODEL GTC-SP FLOWLINE

The calenders are standard equipped with:

- 1 Infeed table with adjustable height
- 2 Protection bar to prevent an operator from damaging the printed paper
- 3 Front outfeed for single sheet production
- 4 Wind and unwinding shafts for transfer and protection paper, each with tensioning device
- 5 Optimized work flow without 'ghosting' of the image
- 6 Cooling down and start-up timer
- 7 Textile unwind and winding position for roll-to-roll printing
- 8 Air pressure operated paper tension setting
- 9 Touchscreen
- 10 Exhaust extraction bar
- 11 Low Tension textile winding for stretch sensitive materials

Options:

- 12 Extended infeed table
- 13 Compressor
- 14 Pneumatic winding shafts





## SPECIFICATIONS

| TYPE        | DRUM<br>SIZE MM | DRUM<br>SIZE INCH | DRUM<br>WIDTH MM | DRUM<br>WIDTH INCH | WORKING<br>WIDTH MM | WORKING<br>WIDTH INCH | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>M <sup>2</sup> /HR | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>FT <sup>2</sup> /HR | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>M/MIN | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>FT/MIN |
|-------------|-----------------|-------------------|------------------|--------------------|---------------------|-----------------------|---------------------------------------------------------|----------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| GFC81-1850  | 195             | 7.7               | 1850             | 72.8               | 1650                | 64.9                  | 82.5                                                    | 888                                                      | 0.83                                        | 2.72                                         |
| GFC81-2750  | 195             | 7.7               | 2750             | 108.3              | 2550                | 100.4                 | 128                                                     | 1377                                                     | 0.83                                        | 2.72                                         |
| GFC81-3400  | 195             | 7.7               | 3400             | 133.9              | 3200                | 125.9                 | 160                                                     | 1722                                                     | 0.83                                        | 2.72                                         |
| GFC101-2000 | 365             | 14.4              | 2000             | 78.7               | 1800                | 70.8                  | 169                                                     | 1821                                                     | 1.53                                        | 5                                            |
| GFC101-2750 | 365             | 14.4              | 2750             | 108.3              | 2550                | 100.4                 | 239                                                     | 2580                                                     | 1.53                                        | 5                                            |
| GFC101-3500 | 365             | 14.4              | 3500             | 137.8              | 3200                | 125.9                 | 310                                                     | 3338                                                     | 1.53                                        | 5                                            |

## FIXATION CALENDERS MODEL GFC



The beltless calender type GFC is designed for the fixation of dispersed dyes and pigments printed directly on the material. Flags, banners and backlit material are ideal to be processed on this type of calender. The stable temperature thanks to the thermal oil and electrically heated drum will give you consistent brilliant colours. Tension of the substrate at the infeed and outfeed is very well controlled by means of special weights that keep the substrate from moving.

This machine is especially characterized by its low cost features.

- ▶ A low investment – no belt required
- ▶ Low cost of operation - no protection paper required
- ▶ Low cost of maintenance – no wear or tear parts of significant value

The machine is easy to operate and suitable for all kinds of (thermo-) stable materials. There is no risk of ink staining by non-fixated material as long as it is sufficiently dried and the rollers and drum are properly cleaned before start-up. Heating up is quick, less than 1 hour and there is no need for a cooling down period before switching off the machine.



## OPTIONS

## FEATURES AND OPTIONS

### MODEL GFC

The calenders are standard equipped with:

- 1 Driven winding and unwinding position
- 2 Tensioning guiding rollers
- 3 Exhaust hood specially designed for complete fume extraction with fan and lifting device
- 4 Touchscreen

Options:

- 5 Driven substrate expander for material with curly edges
- 6 Pneumatic winding shafts

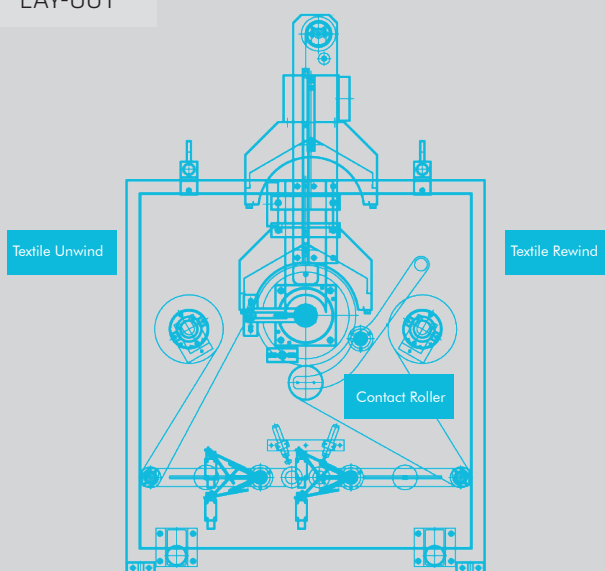


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6

## LAY-OUT



## SPECIFICATIONS

| TYPE                     | DRUM<br>SIZE MM | DRUM<br>SIZE INCH | DRUM<br>WIDTH MM | DRUM<br>WIDTH INCH | WORKING<br>WIDTH MM | WORKING<br>WIDTH INCH | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>M <sup>2</sup> /HR | THROUGH<br>PUT (30 SEC.<br>DWELL)<br>FT <sup>2</sup> /HR | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>M/MIN | LINEAR SPEED<br>(30 SEC.<br>DWELL)<br>FT/MIN |
|--------------------------|-----------------|-------------------|------------------|--------------------|---------------------|-----------------------|---------------------------------------------------------|----------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| GTC131-2000              | 760             | 30                | 2000             | 78.7               | 1800                | 70.8                  | 439                                                     | 4.727                                                    | 4.1                                         | 13.45                                        |
| GTC131-2750              | 760             | 30                | 2750             | 108.3              | 2550                | 100.4                 | 622                                                     | 6.697                                                    | 4.1                                         | 13.45                                        |
| GTC131-3500              | 760             | 30                | 3500             | 137.8              | 3200                | 125.9                 | 805                                                     | 8.670                                                    | 4.1                                         | 13.45                                        |
| GTC141-2000              | 1070            | 42.1              | 2000             | 78.7               | 1800                | 70.8                  | 604                                                     | 6.510                                                    | 5.6                                         | 18.40                                        |
| GTC141-2750              | 1070            | 42.1              | 2750             | 108.3              | 2550                | 100.4                 | 856                                                     | 9.222                                                    | 5.6                                         | 18.40                                        |
| GTC141-3500              | 1070            | 42.1              | 3500             | 137.8              | 3200                | 125.9                 | 1108                                                    | 11.926                                                   | 5.6                                         | 18.40                                        |
| TC151-2000 <sup>1)</sup> | 1350            | 53,1              | 2000             | 78.7               | 1800                | 70.8                  | 745                                                     | 8018                                                     | 6,9                                         | 22,6                                         |
| TC151-2750 <sup>1)</sup> | 1350            | 53,1              | 2750             | 108.3              | 2550                | 100.4                 | 1056                                                    | 11359                                                    | 6,9                                         | 22,6                                         |
| TC151-3500 <sup>1)</sup> | 1350            | 53,1              | 3500             | 137.8              | 3200                | 125.9                 | 1325                                                    | 14255                                                    | 6,9                                         | 22,6                                         |
| TC171-2000 <sup>1)</sup> | 1800            | 70.9              | 2000             | 78.7               | 1800                | 70.8                  | 1080                                                    | 11621                                                    | 10                                          | 32,8                                         |
| TC171-2750 <sup>1)</sup> | 1800            | 70.9              | 2750             | 108.3              | 2550                | 100.4                 | 1530                                                    | 16463                                                    | 10                                          | 32,8                                         |
| TC171-3500 <sup>1)</sup> | 1800            | 70.9              | 3500             | 137.8              | 3200                | 125.9                 | 1920                                                    | 20659                                                    | 10                                          | 32,8                                         |

<sup>1)</sup> BOILER HEATING

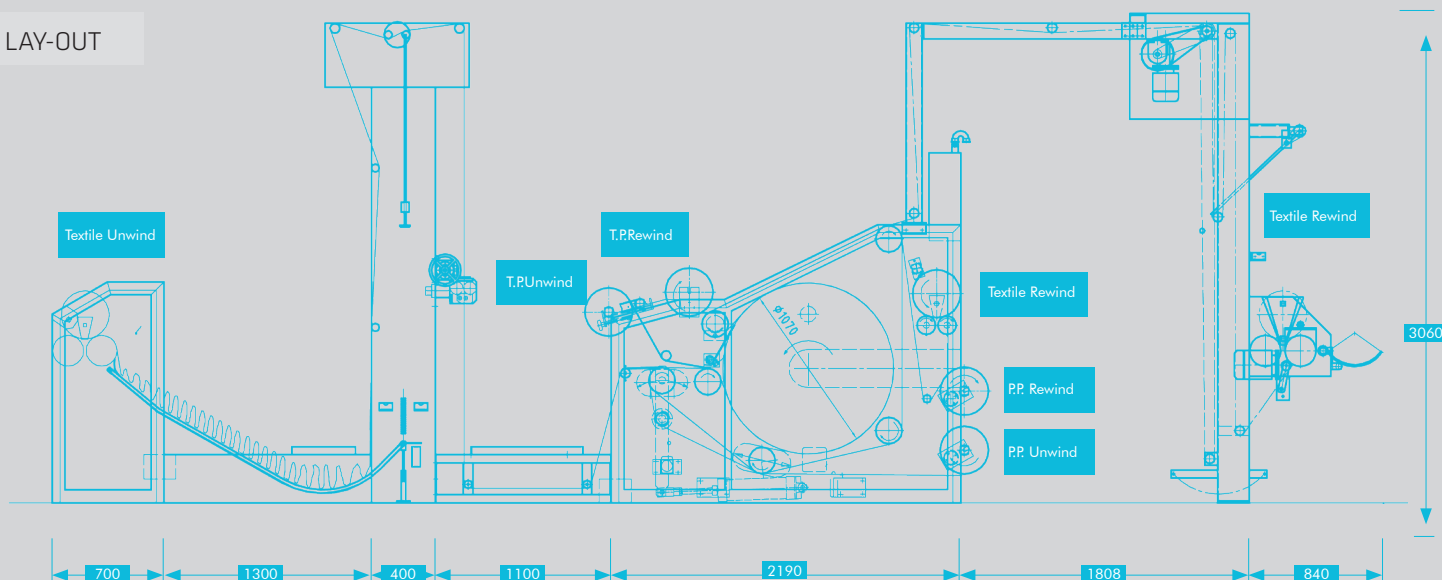
## HIGH VOLUME PRODUCTION EQUIPMENT ROLL-TO-ROLL MODEL GTC/TC

Our complete range of calenders gives you the perfect choice to suit your production capacity. We manufacture industrial large drum machines with processing speeds up to 10 meter per minute or 32.8 ft per minute. Accurate control of temperature, web guiding and blanket pressure result in high quality reproducible products.



The production lines can be equipped with driven and tension(less) controlled winding and unwinding positions, web guiding and edge cutting equipment, accumulators or scray's for uninterrupted production. With the proper options, all kind of materials can be processed: Woven, non woven, knitted or stretch materials, thin or thick.

## LAY-OUT



## FEATURES AND OPTIONS

### MODEL GTC/TC

The calenders are standard equipped with:

- 1 Quick change over systems for transfer paper (TC-Models)
- 2 Heavy duty shafts
- 3 Driven expanding roller
- 4 Fabric cooling
- 5 Cooling down and start-up timer
- 6 Unwind positions for slit edges protection paper

#### Options

- 7 External (Gas) Heating
- 8 Laminating roller
- 9 Metal foil printing
- 10 Touchscreen
- 11 Web guiding equipment
- 12 Chilled cooling rollers and scaffold
- 13 Accumulator for continuous production
- 14 Large roll unwind and rewind
- 15 Pneumatic knives for cutting and trimming



## ABOUT KLIEVERIK

Klieverik Heli B.V. is a dynamic company, focused on rotary thermo-processing equipment for advanced textiles. With more than 40 years of experience we design, manufacture, install and maintain innovative industrial machinery. We manufacture stand-alone equipment and complete production lines. Our highly versatile machinery provides added value and improves the efficiency of textile printing and finishing operations.

We offer solutions with rotary thermo-processing systems, also called heat presses or dwell calenders for:

- ▶ Dye sublimation printing and dye fixation (digital/analog printing)
- ▶ Laminating & coating of (technical) textiles
- ▶ Thermobonding of non woven
- ▶ Production lines for thermoplastic composite prepregs
- ▶ Fusing and laminating of carpet

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